Quiz 3 (02/28)

Name: _____

Problem 1

Predict the output of the following snippets.

In [ ]:
```
1. + 1e-20 == 1
```

In [ ]:
```
BigFloat(1) + 1/BigFloat(BigInt(10)^20) == BigFloat(1)
```

In [ ]:
```
x = 1 + 2im
y = -1 + 3im
x * y
```

In [ ]:
```
3//7 - 1//49
```

In [ ]:
```
A = [1 2; 0 1]
A * A'
```

Problem 2

(Credit to TechieDelight.com) Suppose there is a person walking on an island. The island is a rectangle with vertices at (0,0), (10,0), (0,6), and (10,6). If the person walks anywhere outside of there, they die. Write a recursive function that takes in a starting coordinate `(x0, y0)` and a number of steps `n_steps` that the person will take, and returns the probability that they survive their island walk.

The probability that the person walks `"up"`, `"down"`, `"right"` or `"left"` given that they are standing at the coordinate `(x,y)` is given by the function:

```
function walk_probability(direction, coordinate)
    # ommitted
end
```

I am not asking you to write this function, you are simply meant to use it. For example, the probability that the person walks upwards given that they are at the coordinate (3,3) is given by:

```
walk_probability("up", (3,3))
```

In [ ]:
```
function island_walk(starting_coordinate, n_steps)
```